

Аттрактор Лоренца



$t_{min} := 0$ $t_{max} := 50$ **steps := 3000** appVersion(4) = "1.2.9018.0"

$\sigma := 10$ $\beta := \frac{8}{3}$ $\rho := 28$

$$\begin{cases} x'(t) = \sigma \cdot (y(t) - x(t)) & x(0) = 0.1 \\ y'(t) = x(t) \cdot (\rho - z(t)) - x(t) & y(0) = 0.1 \\ z'(t) = x(t) \cdot y(t) - \beta \cdot z(t) & z(0) = 0.1 \end{cases}$$

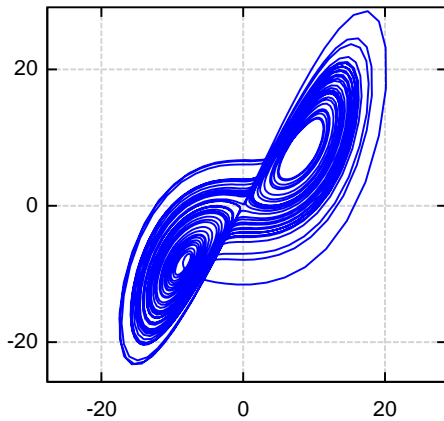
$xyz := \text{rkfixed} \left(\begin{pmatrix} x(t) \\ y(t) \\ z(t) \end{pmatrix}, t_{max}, \text{steps} \right)$

$$\Delta t := \frac{t_{max} - t_{min}}{\text{steps}} = 0.017$$

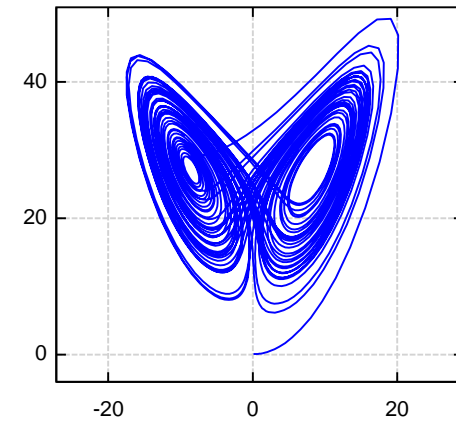
$N := \text{rows}(xyz) = 3001$

$T := \text{col}(xyz, 1)$ $X := \text{col}(xyz, 2)$ $Y := \text{col}(xyz, 3)$ $Z := \text{col}(xyz, 4)$

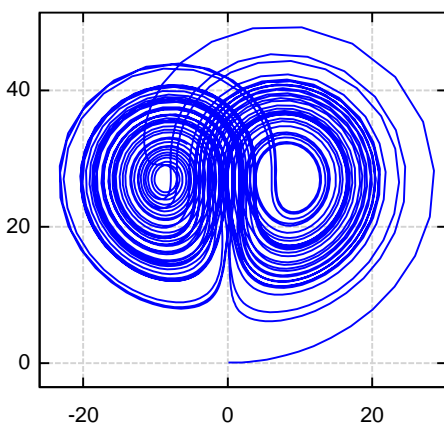
$XY := \text{augment}(X, Y)$ $XZ := \text{augment}(X, Z)$ $YZ := \text{augment}(Y, Z)$



XY



XZ



YZ